brinno
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Motion Activated Camera MAC 200

User Manual

www.brinno.com

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http://www.brinno.com/support/register.html

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Thank you for purchasing this Brinno Motion Activated Camera!

The Brinno **Motion Activated Camera (MAC 200)** is a battery powered, motion activated security camera. Forget the power cord, Ethernet line or DVR system, it is your 100% DIY, 100% Wire-free, 100% portable security anywhere anytime. Brinno' new **Hybrid Mode®** provides 10 X's the Outlook Range.

The dual functionality of a fixed capture interval + Motion Activation provides you with an unprecedented Portable level of Protection. Brinno' exceptional power saving technology, provides super long lasting standby time, combined with Rapid Wake Up functionality. You will never miss a shot!

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Motion Activated Camera Features

14 Months Battery Life

The Brinno MAC200 needs only 2D batteries for up to Fourteen months of power. No need for external power = truly portable.

Dual Protection

Brinno's new Hybrid Mode ® provides the dual functionality of a fixed capture interval + flexible Motion Activation, providing you with an unprecedented Portable level of Protection.

10x Outlook Range

Motion Activation Mode provides coverage up to 6 meters.
Time Lapse Mode provides over 100 meters of coverage. Images captured at a Fixed Capture Rate in the Time Lapse mode cover over 10 times the area of a standard Motion Activated Camera.

< 1 Sec. Rapid Wake Up

All Brinno products have excellent power saving technology, providing super long standby time. Combined with our Rapid Wake Up technology, ensures you will never miss a shot!

Instant Video/ Fast Playback

The Brinno MAC200 captures and converts thousands of photos into a Time Lapse video inside the camera. Review your daily activity with the push of a button.

100% DIY

The Brinno MAC200 is a battery powered, motion activated security camera. Forget the power cord, Ethernet line or DVR system, it is your 100% DIY, 100% Wire-free, 100% portable security, anywhere, anytime.

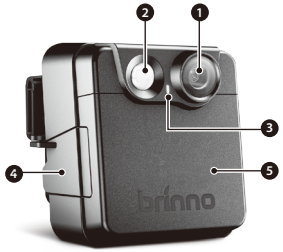
• Output file format

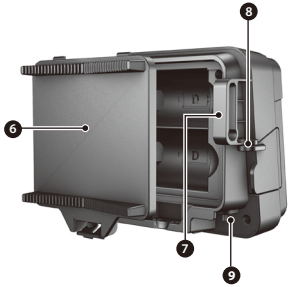
Fast Playback Time Lapse Video, AVI format, resolution is 720P (1280x720).

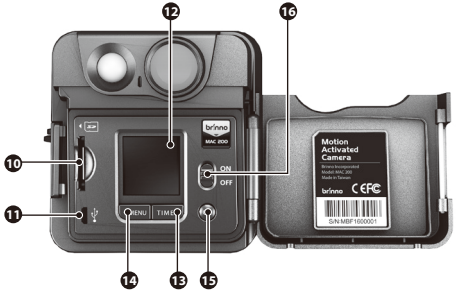
• Package Contents

1. Motion Activated Camera x 1
2. Tree strap x 1
3. Rubber strap x 1
4. Wall Mount x 1
5. User Manual x 1

Parts of the Camera







Front

1. Lens
2. Motion Sensor
3. LED Indicator
4. Operation Control Zone Latch
5. Operation Control Zone Cover

Back

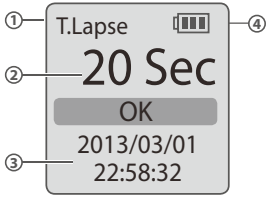
6. Battery Cover
7. Tree Strap Hole
8. Locking Hole
9. External Power Port (DC IN 5V)

Inside Operation Control Zone

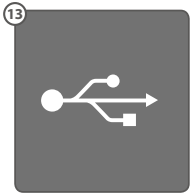
10. SD Card Slot
11. Micro USB port
12. LCD Panel
13. TIME / Next (▶) button
14. MENU / Previous (◀) button
15. OK button
16. Power Switch

Display Icons

Set Up screen



Preview Screen



At Set Up screen

1. Capture mode:
- Motion mode
- Time Lapse
- Hybrid

2. Capture Interval/ Capture Rate: Displayed in Time Lapse Mode/ Hybrid Mode

3. System date and time

4. Battery level

Icon	Description
(green)	Battery full charged.
(green)	Battery partially charged.
(yellow)	Low battery-Replace as soon as possible.
(red)	Out of battery-Replace battery immediately.

At Preview screen

5. Capture Mode:
- M (Motion mode)
- T (Time Lapse mode)
- H (Hybrid mode)

6. Preview Screen

7. Timer

8. Overwrite

9. Battery Level

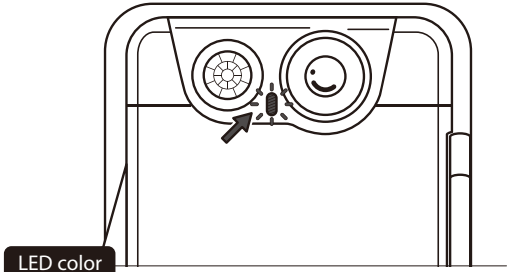
10. Battery Empty
Please replace battery immediately.

11. SD Card Full
Please download files to clear SD card space.

12. SD Card Error
Please replace SD card.

13. Connected to computer via micro USB camera.

LED indicator



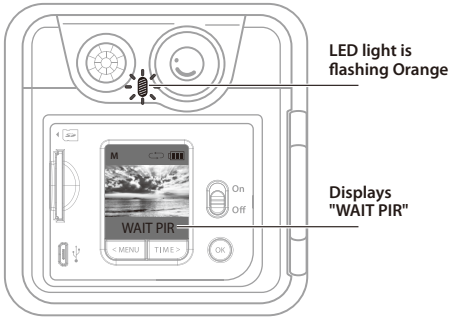
LED color

Green light:
- Indicates image capture in process

Red light:
- Low battery
- Low recording memory on your SD card

Orange light:
- PIR sensor is warming up

PIR warm up



PIR warm up

In Motion Activated mode, when the camera is starting up, the PIR sensor is also activating, and the LCD panel will display "WAIT PIR", and the LED indicator will flash orange. Please wait a few seconds until activated before proceeding.

Initial Set Up

Initial Step-1

Installing the Batteries

Open battery door, insert 2 D batteries and close battery door.

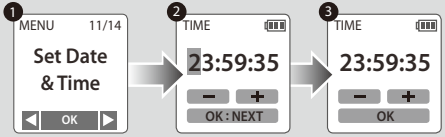
Initial Step-2

Installing SD Card

Insert the SD card.

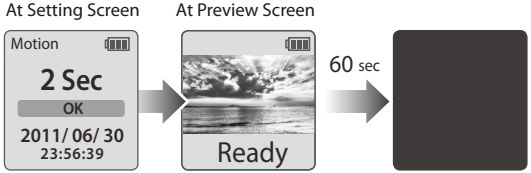
⚠ We support up to 32GB SD cards. And we recommand you to use the maximum SD card to save files.

Initial Step-3



1. Turn on the Motion Activated Camera, press < MENU to go to MENU setting, select Set Date & Time, and press OK .
2. The number with the red background is the number you are setting. Press < MENU for a lower number or TIME > for a higher number. Press OK : Next to confirm and go to the next number.
3. When finished press OK to exit and return to the Set Up Screen.

How Our Power Saving Technology Works



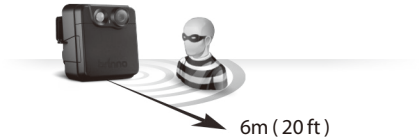
- **At Set Up Screen**
  After 10 seconds without activity on the set up screen, the camera will go to preview screen automatically. You can press < MENU or TIME > to go back to the set up screen.

- **At Preview Screen**
  After 60 seconds without activity on the set up or preview screens, the LCD screen will turn off automatically to save power. You can press OK to wake up.

Motion Activated Mode

Images captured by Motion Activation are in what we consider the Hot Zone meaning close to the device. Motion Activation captures direct threats up close.

Capture Rate	Captures 2-3 frames per second.
Clip Length	Once activated captures for 5 seconds
Motion Sensor Detecting Area	Detecting Angle: 100° Detecting Distance: 6M



Motion Sensor Activated
Capture for **5 seconds**

Motion Sensor Activated
Capture for **5 seconds**

Motion Sensor Activated
Capture for **5 seconds**

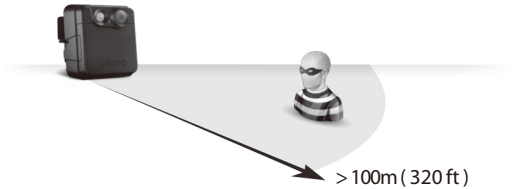
No Activities, capture finished.

Once activated the Motion Activated Camera will capture for 5 seconds, during this period if the Motion Sensor is activated again, it will extend the capture time for 5 more seconds. When the motion ceases and the Motion Activated Camera finishes capturing, all the frames will be stored into one AVI file.

Time Lapse Mode

Images captured at a Fixed Capture Rate are captured in the Time Lapse mode and cover a range over 100 meters deep in the detecting area.

Capture Rate	Captures 2~3 frames per second ~24 hours (How to set Capture Interval? please refer to page18)



Hybrid Mode

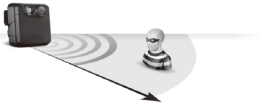
Hybrid Mode

Brinno Hybrid Mode combines Fixed Capture Rate and Flexible Motion Detection. They provide Dual Protection in the Hot Zone. In standby mode the camera works in Time Lapse Mode, and the camera will capture images at your desired Capture Rate (2 second~24 hours) When motion is detected the camera will switch to Motion Mode and capture 2~3 frames per second.

You will never miss a shot !

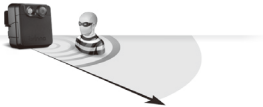
Capture Rate	**Time Lapse mode**, 2 second ~24 hours. **Motion mode**, capture 2-3 frames in one second.

Hybrid Time Lapse Mode



Normally, the Motion Activated Camera is operating in the Time Lapse mode. It features an extended-time and wide angle recording area. The Playback Rate (the film frequency) is custom and based on your setting. (E.g. 1 minute captures 1 photo)

Hybrid Motion Mode



When any movement is detected in the Detecting Zone (Detect angle = 100°/ Detect distance = 6 M), the Motion Activated Camera will shift to the Motion Mode, and captures 2-3 photos per second. At this range it will record the target in greater detail.

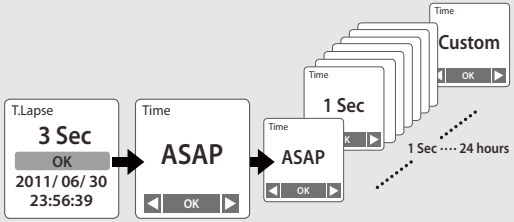
Start Recording

Before starting recording, please select your capture mode:
Motion Mode / Time Lapse / Hybrid Mode.

Motion Mode

1. At the set up screen, press OK to go to preview screen.
2. Press OK again to start recording. The LCD will display the " • REC " icon.
3. After 5 seconds without any activity, the LCD screen will turn off to save power.

Time Lapse Mode & Hybrid Mode



1. At the set up screen, press TIME > to set a capture interval (capture rate).
2. Press < MENU and TIME > to select a pre-set capture interval or customize it. When complete, press OK to confirm and return to the set up screen.

Stop Recording

To Stop Recording

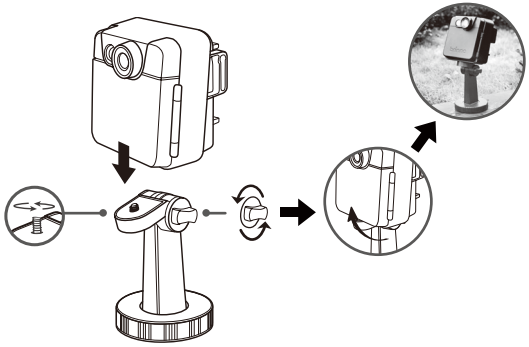
1. Hold OK until the LCD screen turns on.
2. The LCD screen will show the "Processing" icon. The Motion Activated Camera is saving your data. Please wait until the icon disappears.
3. Once complete, the LCD panel will return to the Preview screen.

Basic Installation

Mount it anywhere, no power required so anywhere really means anywhere.

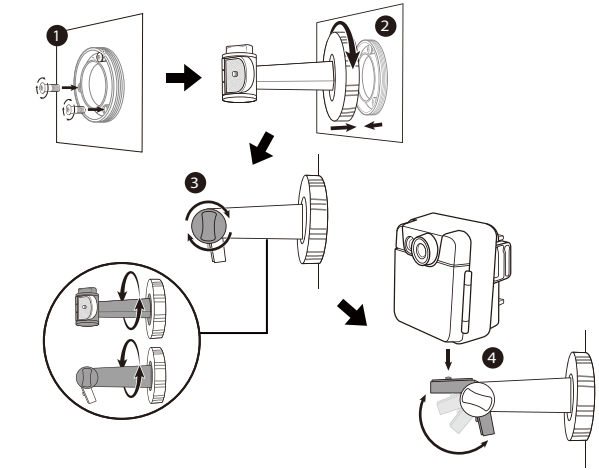
3 ways to mount the camera

A-1 Wall Mount

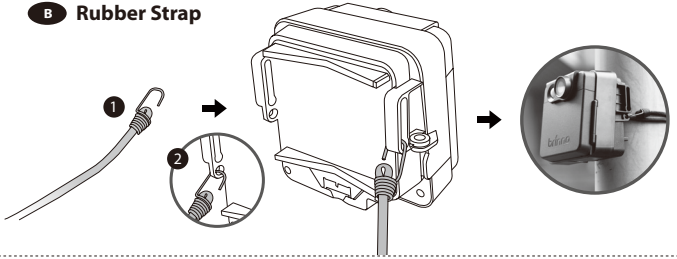


Basic Installation

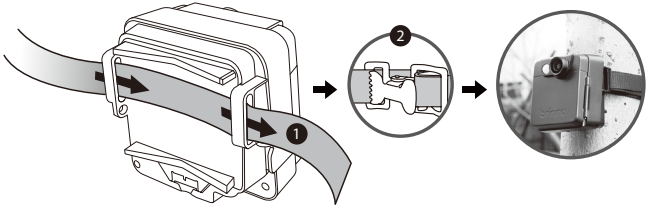
A-2 Wall Mount



B Rubber Strap

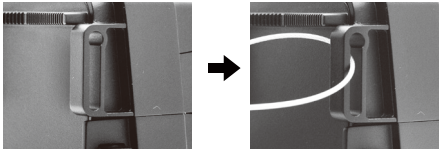


C Tree strap

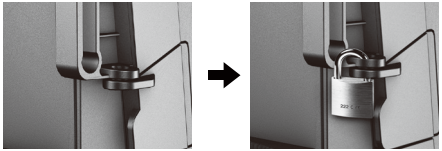


2 ways to secure the camera safety

❶ Security Lock Cable



❷ Camera Body Lock



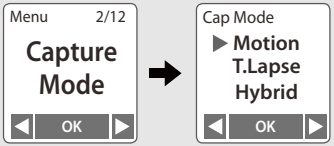
Go to the MENU setting

Power on the Motion Activated Camera, press < MENU to go to the MENU setting.

❶ SD card capacity

In this mode, the LCD will display the SD card capacity, telling you how much free space remains on the SD card.

❷ Capture Mode

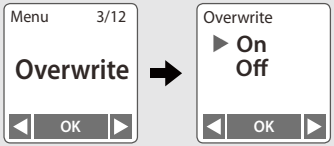


You select your capture mode with this function.

1. Select between :
   Motion = Motion Activated mode
   T. Lapse = Time Lapse mode
   Hybrid = Hybrid mode.

2. Press OK to confirm.

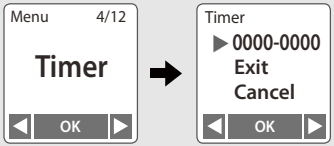
❸ Overwrite



When the SD card free space is less than 1%, the Overwrite function will remove old files to ensure SD card has more than 1% free space. If you do **not** want the SD Card to be over written, and files deleted, select Off.

1. Select On or Off by < MENU and TIME > .
2. Press OK to confirm.

❹ Timer



This function is used in Time Lapse mode and Hybrid mode. The Timer will allow you to pre-set a recording period. (E.G. 8 am–5 pm) Select 0000-0000 and select OK to go to the timer setting menu.

Don't want to set a daily recording time frame, select Cancel to cancel the setting.

❹ Timer

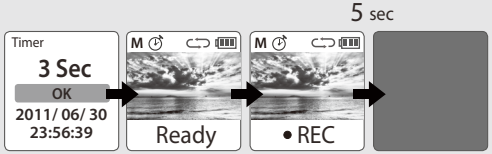
A B

▶ 0000-0000

e.g.
0600-1600 morning to afternoon
1600-2330 afternoon to night
2345-0500 overnight

1. Set the start recording time (A area), then set the stop recording time (B area). Press < MENU to lower the number, press TIME > to increase the number and press OK to move to the next column.

4 Timer

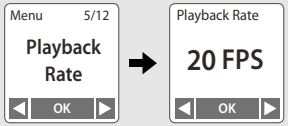


2. After setting the times, return to the set up screen and press OK to move to the preview screen.

3. Press OK to start recording. The camera will automatically activate at the start recording time you selected.

Once you have activated the Timer, all functions, like Motion Activated mode, Time Lapse mode and Hybrid mode, will only work during the time period selected.

5 Playback Rate



You can select the videos FPS (frames per second) playback speed with this setting.

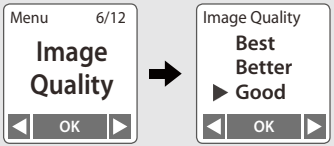
1. Select a FPS number using the < MENU and TIME > .

2. What Playback Rate should I use?
   Generally, 10 FPS is suitable for Time Lapse video, but depending on your needs you can set it to anywhere between 1 - 30 FPS.

1 FPS If the video plays at 1 frame per second, the video will not look smooth, and the video length will be longer.

30 FPS If the video plays at 30 frames per second, the video will look smooth, and the video length will be shorter.

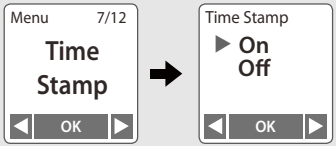
6 Image Quality



The Image Quality setting lets you choose a image quality to fit your needs. The image quality setting will determine the number of frames that can be stored on the SD Card : The higher the quality the fewer images you can store on your SD Card.

Option	Single frame size	Description	4GB capacity SD card
Best	200~400 kb	Low compression rate produces the maximum image data for the highest quality images	≒14,000 photos
Better	150~300 kb	General usage	≒ 20,000 photos
Good	70~150 kb	High compression rate produce less image data, best for long capture periods	≒ 30,000 photos

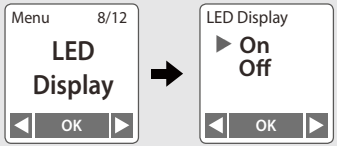
7 Time Stamp



You can choose if you want the time stamp to show at bottom of your video. Select On or Off using the < MENU and TIME > buttons.

1. Select < MENU or TIME > .
2. Press OK to confirm.

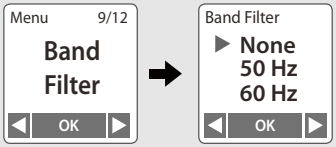
8 LED Display



You can choose whether or not the LED will flash while capturing each frame.

1. Select < MENU or TIME > .
2. Press OK to confirm.

❾ Band Filter



Select the correct fluorescent lighting frequency to match your indoor lighting frequency.

1. Select between : None, 50 Hz and 60 Hz options.
2. None: For outdoor enviroments
   50 Hz: Europe
   60 Hz: USA

⚠ We suggest you use None when the scene is outdoors.

❿ Set Date and Time

Set the correct date and time for your cameras location.

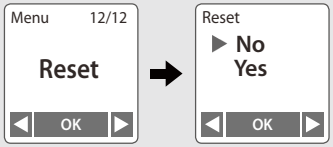
1. The number with the red background is the number you are setting. Press - (< MENU) for a lower number or + (TIME >) for a higher number. Press OK : Next to confirm and go to the next number.
2. When finished press OK to exit and return to the set up screen.

11 FW version

Displays the current version of firmware installed on the camera.

1. Displays the current version of firmware.
2. Press OK to exit.

12 Reset



You can reset your camera back to the factory default settings.

1. Select Reset.
2. Select Yes and press OK to reset your camera.

Reset

Function	Setting
Capture Mode	Motion Mode
Overwrite	On
Timer	Off
Playback Rate	20 FPS
Image Quality	Good
Time Stamp	ON
LED Display	ON
Band Filter	None

SD card size	Frame
4 GB SD Card	30,000
8 GB SD Card	60,000
16 GB SD Card	120,000
32 GB SD Card	240,000

⚠ Base on image quality setting of "Good"

Battery Life

Capture interval	Frames captured to low battery	Days
ASAP	1845000	7
1 sec	1537500	18
2 sec	1476000	34
5 sec	1317800	76
10 sec	1118000	129
30 sec	696200	242
1 min	444570	309
5 min	114240	397
10 H	59230	411
1 H	10185	424
4 H	2558	426
24 H	427	427

Motion mode & Hybrid mode

- Stand by time: 427 days
- Frames captured to low battery: 1845000 frames

Specification

Camera	
Model	MAC 200
LCD Screen	1.44" TFT LCD
Waterproof	IPX4
Capture Mode	
Time Lapse	Auto generation of Time Lapse video
Motion Activated	PIR motion detection
Hybrid	Combine Time Lapse and Motion Activated mode
PIR Sensor	
Detect distance	6M
Detect Angle	100°
Image Sensor	
Type	1/4" CMOS sensor
Resolution	1.3 Mega pixel
Pixel size	2.8 µm
Sensitivity	2500mV/lux-sec (Ultra good low light quality)

Specification

Optics Lens	
Aperture	F2.0
Field of View	75°
Focal Length	28 mm (35mm equivalent)
Focus Distance	60 cm (Minimum)
Recording	
Time Lapse Video	Format: AVI
Memory Storage	SD Card (Supported up to 32GB)
Power	
Power source	Battery: 2 x D cell Batteries
	DC IN: 5V
Dimension	
Size(DxWxH)	106x110x78 mm (4.13"x4.29"x3.04")
Weight	270g (0.59 lb) (without batteries)
Color	Black
Operation Temperature	
	- 20°C ~ 50°C - 4°F ~ 122°F

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